

10/586683
IAP6 Rec'd PCT/PTO 20 JUL 2006

THE FOLLOWING IS THE ENGLISH TRANSLATION OF THE
ANNEXES TO THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT UNDER ARTICLE 34:
Amended Sheets (pages 12, 13)

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What is claimed is:

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1. A process for preparing dinitrotoluene, in countercurrent, comprising the steps of
 - 5 a) reacting toluene with nitric acid in the presence of sulfuric acid to give mononitrotoluene,
 - b) separating the reaction product from step a) into an organic phase comprising mononitrotoluene and an aqueous phase comprising sulfuric acid,
 - 10 c) reacting the organic phase comprising mononitrotoluene with nitric acid in the presence of sulfuric acid to give dinitrotoluene,
 - d) separating the reaction product from step c) into an organic phase comprising dinitrotoluene and an aqueous phase comprising sulfuric acid,
- 15 wherein the reaction product from step a) has a content of toluene of 0.5-8% by weight, based on the organic phase, and a content of nitric acid of from 0.1 to 1.2% by weight, based on the aqueous phase, and the phase separation in step b) is carried out by means of dynamic separators.
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2. The process according to claim 1, wherein the reaction product from step a) has a content of toluene of from 3.5 to 5% by weight based on the weight of the organic phase from step a).
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3. The process according to claim 1, wherein the organic phase comprising mononitrotoluene from step b) is transferred to step c) without further workup.
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4. The process according to claim 1, wherein the aqueous phases comprising sulfuric acid from steps b) and d), if appropriate after a workup and concentration, are reused in step a) and c).
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5. The process according to claim 1, wherein the reaction apparatus used for steps a) and c) are stirred tanks and/or flow reactors.
6. The process according to claim 1, wherein step a) is carried out in only one reaction apparatus.
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7. The process according to claim 1, wherein step c) is carried out in a maximum of two reaction apparatus connected in series.

8. The process according to claim 1, wherein step a) is carried out at a temperature in the range between 35 and 70°C.
- 5 9. The process according to claim 1, wherein step c) is carried out at a temperature in the range between 60 and 85°C.
- 10 10. The process according to claim 1, wherein the molar ratio of nitric acid to toluene in stage a) is in the range between 0.95 and 1.12.
- 10 11. The process according to claim 1, wherein the molar ratio of nitric acid to mononitrotoluene in stage c) is in the range between 1.03 and 1.10.
- 15 12. The process according to claim 1, wherein the aqueous phase comprising sulfuric acid from stage b) is concentrated to give sulfuric acid having a concentration of from 85 to 96% and recycled in stage a).
- 15 13. The process according to claim 1, wherein the aqueous phase comprising sulfuric acid from stage d) is admixed with nitric acid and recycled into stage a).
- 20 14. The process according to claim 1, wherein the nitric acid supplied in stage a) and stage c) has a concentration of from 58 to 100%.